

## **Exhibit 6**

Appln. No. 10/038,676  
Amdmt. dated October 14, 2004  
Reply to Office Action of August 11, 2004

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (currently amended) A fertilizer composition comprised of decontaminated manure and Bacillus spores, wherein the decontaminated manure has a total aerobic/facultative viable plate count reduced by 2-4 logs (100 to 10,000 times) compared to raw manure, the Bacillus spores are present in sufficient concentration to effect a viable spore count of between  $10^6$  cfu to  $10^9$  cfu per gram of dry composition, and the Bacillus spores are derived from Bacillus selected from the group consisting of Bacillus laterosporus (ATCC PTA-3952), Bacillus laterosporus (ATCC PTA-3593), Bacillus licheniformis (ATCC PTA-6175), Bacillus subtilis (ATCC PTA-6174), and mixtures thereof.

2. (original) The fertilizer composition of claim 1 comprising a humic acid.

3. (original) The fertilizer composition of claim 2 comprising an additive selected from the group consisting of N compounds, P compounds, K compounds, and combinations thereof.

4. (original) The fertilizer composition of claim 3 where the decontaminated manure, the Bacillus spores, the additive, and the humic acid are blended into an admixture resulting in a granular or powdered product.

5. (original) The fertilizer composition of claim 4 where the decontaminated manure, the Bacillus spores, the additive, and the humic acid are formed into prills or pellets.

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### **REMARKS**

Applicant kindly thanks the Examiner for the Office action of August 11, 2004, in which claims 1-28 were rejected as obvious over several references. Applicant respectfully maintains that all claims as originally filed were allowable without amendment, but has amended claim 1 to incorporate original dependent claims 13, 15 and 16, without prejudice to filing one or more continuation applications covering original claims 1-28 and the non-elected claims. The specification has also been amended to supply the American Type Culture Collection (ATCC) accession numbers, as well as to clean up various minor issues. No new matter has been added to the application. As two deposits were made after the effective filing date of the application, a corroborating statement as required under 37 CFR Section 1.804(b) is being obtained from the inventor and will be forwarded promptly.

With the entry of the amendments herein, and consideration of the arguments regarding the references cited as well as the state of the art, it is respectfully maintained that the application is now in condition for allowance.

### **The Claimed Invention**

The present inventive fertilizer is a unique and patentable composition that departs from previous efforts to improve crop yields using animal manure-based fertilizers, while at the same time reducing the total nitrogen requirement of the plant. The key components of the compositions of the invention are decontaminated manure and an effective amount of *Bacillus* spores having the characteristics recited in Claim 1, as amended. It is important to note that these two components, in combination and as now claimed, are not taught or suggested in any of the references known to the inventor or cited by the examiner.

The decontaminated manure ingredient may be produced by composting animal manure, by chemical treatment, or combination of these methods. In any case, the important point regarding this ingredient is that the animal manure must be *decontaminated* as taught in the specification (see especially pages 15-17). **As used in**

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the invention, "decontaminated" means the animal manure has a total microbial plate count per gram reduced by about 2-4 logs (100 to 10,000) compared with fresh, untreated (raw) manure. Furthermore, when manure with a microbial content below  $1 \times 10^6$  cfu/gram is employed, the fertilizer compositions of the invention will have *Bacillus* purity of greater than 90 percent. (page 16, lines 16-22).

Regarding the *Bacillus* spores, note that any *Bacillus* species that produces stable spores can be used in the invention (specification at page 15, lines 1-23). Preferred are those species and strains of *Bacillus* that are capable of exerting a positive effect on the microbial composition of the rhizosphere of the plant in question, especially those strains that produce significant increases in the population of Actinomycetes and nitrogen-fixing bacteria within a plant rhizosphere (specification at page 15, lines 15-23). Particular species and strains, as well combinations thereof, are recited explicitly in Claims 1 and 17-21, and functionally in claim 24.

As noted in the specification discussing the various experiments and examples, a unique synergism has been discovered between probiotic *Bacillus* bacteria and decontaminated manure. See paragraph bridging pages 16-17, where it is noted "Experiment #4 illustrates the unique synergism that exists between probiotic *Bacillus* bacteria and decontaminated manure, treated by the hypochlorite process of the present invention, when they are used separately and in combination in potato production; potato yields are significantly greater when the combination is used. It is apparent that nutrients contained in the decontaminated manure stimulate the growth of the *Bacillus* within the rhizosphere environment leading to increased potato yields."

#### **The Scope and Content of the Prior Art**

The prior art can be simplified into 3 categories: those references that either treat raw animal manure to make it more usable as a fertilizer or teach avoiding its use altogether; those references discussing the use of microorganisms, including *Bacillus*, for increasing plant yields, usually in aqueous mixture; and those references teaching the use of a mixture of raw manure and microorganisms. However, as will be seen, there is no motivation from these references to decontaminate manure, or to combine